



U.S. Marine Corps

REQUIREMENT STATEMENT



DEPARTMENT OF THE NAVY
HEADQUARTERS UNITED STATES MARINE CORPS
WASHINGTON, D.C. 20380-0001

IN REPLY REFER TO
5231/20A
MCCTA
11 AUG 1983

From: Commandant of the Marine Corps

Subj: INFORMATION RESOURCES MANAGEMENT (IRM) REQUIREMENTS
STATEMENT

Ref: (a) MCO P5231.1
(b) MCO 5271.1
(c) MCO P5600.31

Encl: (1) IRM-5231-20A

1. PURPOSE. To provide guidance and instructions on the development of a Requirements Statement as required by reference (a).
2. CANCELLATION. IRM-5231-20.
3. SUMMARY OF REVISION. This revision adds a discussion of the methodology for prioritizing requirements, expands the content description, adds figures to describe the relationship of the requirements statement to other system development methodology (SDM) documentation, and adds appendixes on references, content, functional requirements, and prioritizing requirements.
4. AUTHORITY. This publication is published under the auspices of reference (b).
5. APPLICABILITY. The guidance contained in this publication is applicable to all Marine Corps personnel and contractors responsible for the preparation of a Requirements Statement. This standard is applicable to the Marine Corps Reserve.
6. DISTRIBUTION. This technical publication will be distributed as indicated. Appropriate activities will receive an updated individual activity Table of Allowances for Publications. Requests for changes in allowance should be submitted in accordance with reference (c).
7. SCOPE
 - a. Compliance. Compliance with the provisions of this publication is required unless a specific waiver is authorized.
 - b. Waivers. Waivers to the provisions of this publication will be authorized only by the appropriate approval authority, as defined by reference (a), on a case by case basis.

5231/20A
CCIS-24

Subj: INFORMATION RESOURCES MANAGEMENT (IRM) REQUIREMENTS
STATEMENT

8. RECOMMENDATIONS. Recommendations concerning the contents of this technical publication should be forwarded to MCCTA via the appropriate chain of command. All recommended changes will be reviewed upon receipt and implemented as appropriate.

9. SPONSOR. The sponsor of the technical publication is MCCTA



G. L. MCKAY
By direction

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DEPARTMENT OF THE NAVY
HEADQUARTERS UNITED STATES MARINE CORPS
WASHINGTON, D.C. 20380-0001

IN REPLY REFER TO:

5231/20A Ch 1
CTAS-20
27 MAY 1992

From: Commandant of the Marine Corps

Subj: INFORMATION RESOURCES MANAGEMENT (IRM) REQUIREMENTS
STATEMENT

Encl: (1) New page inserts to IRM-5231-20A

1. PURPOSE. To transmit new page inserts and direct pen changes to the basic technical publication of 11 August 1989.

2. ACTION

a. Remove present pages 1-3 to 1-5 and the COMMENTS/REVISIONS page and replace with new pages 1-3 to 1-5, and the new COMMENTS/REVISIONS page.

b. On page 1-1, change section 3 paragraph heading of "Security" to "Security Requirements".

c. Change the CMC Code in the basic letter of promulgation from "CCI" to "MCCTA" in paragraphs 8 and 9.

d. Change the "Distribution:" of the basic letter of promulgation to read the same as shown in the "Distribution:" section of this change.

3. FILING INSTRUCTIONS. This change transmittal will be filed immediately following the signature page of the basic technical publication.

4. CERTIFICATION. Reviewed and approved this date.


H. W. JENKINS, JR.
Assistant Chief of Staff
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UNITED STATES MARINE CORPS
Information Resources Management (IRM) Standards
and Guidelines Program

REQUIREMENTS STATEMENT
IRM-5231-20A

21 AUG 1989

Enclosure (1)

REQUIREMENTS STATEMENT

IRM-5231-20A

RECORD OF CHANGES

Completed change action as indicated.

Change Number	Date of Change	Date Received	Date Entered	Signature of Person Entering Change

PUBLICATION TABLE OF CONTENTS

	<u>Paragraph</u>	<u>Page</u>
<u>Chapter 1</u>		
GENERAL		
Section 1. INTRODUCTION.....	1.1.	1-3
Section 2. SCOPE.....	1.2.	1-3
Section 3. METHODOLOGY.....	1.3.	1-3
 <u>CHAPTER 2</u>		
FORMAT AND CONTENT DESCRIPTION		
Section 1. DOCUMENTATION STANDARDS.....	2.1.	2-3
Section 2. DOCUMENTATION DEPENDENCIES.....	2.2.	2-3
 <u>APPENDICES</u>		
A. REFERENCES.....		A-1
B. REQUIREMENTS STATEMENT TABLE OF CONTENTS.....		B-1
C. REQUIREMENTS STATEMENT CONTENT DESCRIPTION.....		C-1
D. FUNCTIONAL REQUIREMENTS EXAMPLE.....		D-1
E. PRIORITIZING REQUIREMENTS EXAMPLE.....		E-1

REQUIREMENTS STATEMENT

IRM-5231-20A

LIST OF FIGURES

<u>Figure</u>		<u>Page</u>
2-01	ANALYSIS AND STUDIES	2-5
2-02	PRECEDENCE RELATIONSHIP	2-6

REQUIREMENTS STATEMENT
IRM-5231-20A

Chapter Table of Contents

Chapter 1

GENERAL

	<u>Paragraph</u>	<u>Page</u>
Section 1. <u>INTRODUCTION</u>	1.1.	1-3
Section 2. <u>SCOPE</u>	1.2.	1-3
Contents	1.2.1.	1-3
Section 3. <u>METHODOLOGY</u>	1.3.	1-4
General	1.3.1.	1-4
Requirements Documentation	1.3.2.	1-4
Prioritizing Requirements	1.3.3.	1-5
Security Requirements	1.3.4.	1-5

Chapter 1

GENERAL

1.1. INTRODUCTION. The Requirements Statement provides the preliminary documentation of functional requirements based on the deficiencies identified in the Mission Need Statement (MNS). This standard defines the format, content and methodology for developing a Requirements Statement. Adherence to this standard assures the Requirements Statement adequately addresses all aspects of the requirements documentation process as required by MCO P5231.1, Life Cycle Management for Automated Information Systems (LCM-AIS) Projects. Appendix A provides a list of references associated with life cycle management and system development.

1.2. SCOPE. The Requirements Statement is developed from objectives established in the MNS and is used as the basis for the initial analysis and study of a system. The Requirements Statement is produced during the Concepts Development Phase of the project life cycle. The primary purpose of this phase is to identify the functional requirements of the user based on a validated/approved need. A comprehensive determination of functional requirements is needed to analyze the technical, operational, and economic feasibility of alternate solutions to the deficiencies cited in the MNS. The Requirements Statement does not provide the solution to the identified system deficiencies, rather it lays out the requirements so that a solution can be determined after information is gathered.

1.2.1. Contents. The functional requirements must be identified, prioritized and documented. Based on deficiencies cited in the MNS, system objectives expressed in terms of functional performance measures must be established. The functional requirements shall relate to and be developed from established objectives. Appendixes B and C describe Requirements Statement format and content requirements. The format for all project deliverables (e.g., the Requirements Statement) is guided by IRM-5230-02, Project Deliverable Style Manual. A Requirements Statement shall contain the following items:

- a. The purpose of the Requirements Statement.
- b. A brief description of the current methods and procedures used to satisfy existing information requirements including the identification of the current users of the system.
- c. Identification of system objectives based on the deficiencies cited in the MNS.
- d. Identification of functional requirements to be satisfied.

REQUIREMENTS STATEMENT
IRM-5231-20A

e. Identification of interfaces with other systems as well as interoperability and intraoperability requirements per MCO 3093.1.

f. Identification and discussion of expected operational environments.

g. Identification of system backup capability requirements.

h. Description of any significant requirements for system flexibility.

i. Identification of telecommunication requirements.

1.3. METHODOLOGY.

1.3.1. General. The general functional needs, as perceived by the user, must be identified, prioritized, and documented in a clear and concise statement of functional requirements. This statement should contain sufficient qualitative detail to validate the project and provide the basis for determining feasible alternatives.

1.3.2. Requirements Documentation. Functional requirements must be provided by the users. The functional analyst(s), designated by the functional sponsor, must refine, consolidate and resolve conflicts to produce a set of requirements from which the system can be developed. Throughout the life of an AIS development project, the Project Manager should be able to trace all acquired or developed products back to the validated requirement that they are satisfying. For example, the Project Manager should be able to determine a direct relationship between a piece of delivered program code, the design of the code, and the functional requirement that they are satisfying. Requirements should be numbered to facilitate tracing. Appendix D provides examples of basic functional requirements described in functional terms. The following paragraphs provide suggested methods used to collect and analyze functional requirements. Alternative methods of collecting and analyzing requirements may be used.

a. Study Existing System. The quickest way to understand any application is to study the existing system. The objective of this technique is not to document the existing system but to understand it. It may be beneficial to summarize your understanding of the system by drawing a system flowchart and highlighting the areas where problems/deficiencies have been identified. A thorough understanding of the present system, automated or non-automated, is essential prior to determining if a new system, or modifying the existing system, is required. For example, it may be more realistic to satisfy the new requirements by modifying the present system than developing a new AIS. As the development proceeds, it is important to understand the present system for comparison to the proposed system.

REQUIREMENTS STATEMENT

IRM-5231-20A

b. Problem Definition. Typically, interviews or surveys are necessary to define the functional requirements. All users involved in the system must be contacted, from top management to those at the lowest point in the system. The first set of data collected should produce an extensive list of the users' perceived requirements. From this first list, the functional analysts receive their initial insights in defining these needs, and specific questions can be formulated on any problems or potential conflicts.

c. Clarify Scope and Objectives. After studying the first set of results, users should be contacted again to pinpoint omissions, delete unnecessary requirements and define a reasonable set of functional requirements. Functional analysts should then review and revise as necessary. This iterative process shall continue until the users approve the requirements list. This approval formalizes the users' stated requirements and shall ultimately enhance user satisfaction knowing that their direct participation contributed to the concept development.

1.3.3. Prioritizing Requirements. Requirements should be prioritized to determine the criticality of the need. The requirements for each problem/deficiency should be separately identified. Each problem/deficiency should then be ranked as to its severity and priority and classified to determine which system objective it meets. A suggested method for prioritizing requirements is provided in Appendix E.

1.3.4. Security Requirements. The Computer Security Act of 1987 (Public Law 100-235) mandates the enforcement of Government-wide computer security measures. It is essential that security and privacy of information be considered during the determination of functional requirements. MCO P5510.14, Marine Corps Automatic Data Processing (ADP) Security Manual provides policy and guidance for Marine Corps security requirements. Additional information is provided in the 5239 series of technical publications issued under the IRM Standards and Guidelines Program.

Chapter Table of Contents

Chapter 2

FORMAT AND CONTENT DESCRIPTION

	<u>Paragraph</u>	<u>Page</u>
Section 1. <u>DOCUMENTATION STANDARDS</u>	2.1.	2-3
User Requirements	2.1.1.	2-3
Level of Detail	2.1.2.	2-3
Evaluation Criteria	2.1.3.	2-3
Section 2. <u>DOCUMENTATION DEPENDENCIES</u>	2.2.	2-3

Chapter 2

FORMAT AND CONTENT DESCRIPTION

2.1. Documentation Standards. The Requirements Statement shall be developed in accordance with the criteria described in the following paragraphs.

2.1.1. User Requirements. In documenting functional requirements via the Requirements Statement, the table of contents described in Appendix B and the content description described in Appendix C shall be used.

2.1.2. Level of Detail. Identify system objectives based on the deficiencies cited in the MNS. These objectives should be user oriented and distinct enough to permit the development of user capabilities. Quantifiable objectives provide the most meaningful information toward development of quantifiable functional requirements.

2.1.3. Evaluation Criteria. When evaluating the Requirements Statement for completeness and accuracy, the reviewer must, as a minimum, ensure that the following criteria are met.

a. All sections and paragraphs in Appendix B, "Requirements Statement Table of Contents," are addressed.

b. The title of any section or paragraph deemed not appropriate is listed as "not applicable." Explanations may be required to justify not including this data in the Requirements Statement.

c. The content of all sections and paragraphs is completed per Appendix C, "Requirements Statement Content Description."

d. The purpose and scope of the Requirements Statement is consistent with the intent of this standard.

e. The Requirements Statement is comprehensive, definitive and feasible.

2.2. Documentation Dependencies. The Requirements Statement provides the basic functional requirements documentation for all other project deliverables and/or standards in the life cycle management process. Figure 2-01, "Analysis and Studies," and Figure 2-02, "Precedence Relationship," show the project deliverables which are dependent on the Requirements Statement.

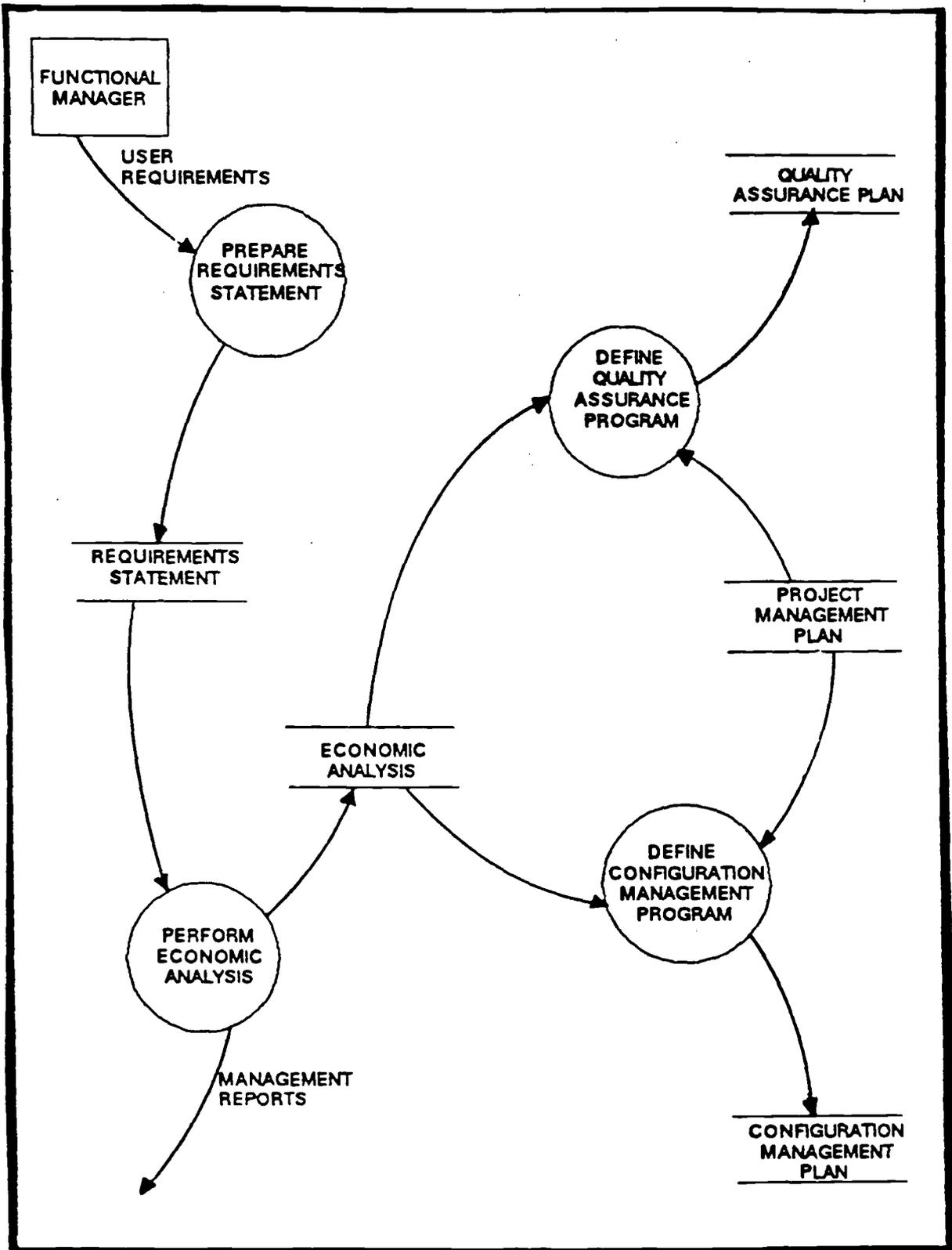
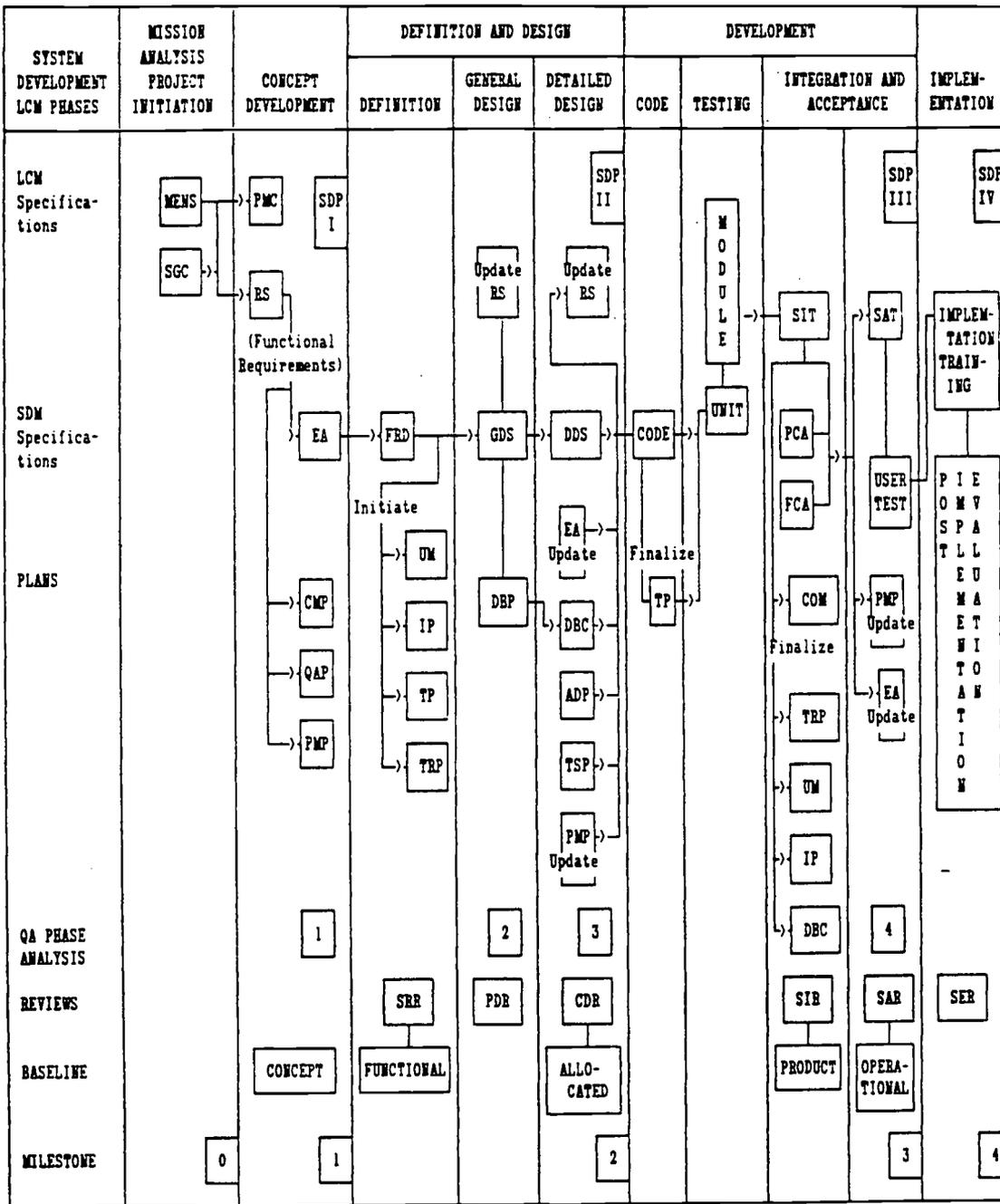


FIGURE 2-01
ANALYSIS AND STUDIES

REQUIREMENTS STATEMENT
IRM-5231-20A



PRECEDENCE RELATIONSHIP
FIGURE 2-02

Appendix A

REFERENCES

1. MCO P5231.1A, Life Cycle Management of Automated Information Systems (LCM-AIS) Projects
2. MCO 3093.1B, Intraoperability and Interoperability of Marine Corps Tactical C4I Systems
3. Systems Development Methodology (SDM) Overview (IRM-5231-01)
4. SDM - Developer Perspective (IRM-5231-02)
5. DoD Directive 5200.28, Security Requirements for Automated Information Systems (AISs)

REQUIREMENTS STATEMENT

IRM-5231-20A

Appendix B

REQUIREMENTS STATEMENT TABLE OF CONTENTS

		REQUIREMENTS STATEMENT
SECTION 1		General
	1.1	Purpose
	1.2	Points of Contact
SECTION 2		System Summary
	2.1	Existing Methods and Procedures
	2.2	Required Objectives
SECTION 3		Required Capabilities
	3.1	User Requirements
	3.2	Performance Requirements
	3.3	Telecommunications Requirements
	3.4	Sensitivity of Data Requirements
SECTION 4		Design Details
	4.1	Interface Requirements
	4.2	Operating Environment
	4.3	System Upgrades
	4.4	Contingency Planning
	4.5	System Flexibility
APPENDICES		
	A	Project References
	B	Terms and Abbreviations
	C	Process Descriptions and Models

Appendix C

REQUIREMENTS STATEMENT CONTENT DESCRIPTION

SECTION 1. GENERAL

1.1 PURPOSE

This paragraph shall contain the purpose of the Requirements Statement. The following is an example of what might appear here:

"This document provides a written statement of user requirements which will provide a basis for defining and analyzing feasible and cost effective alternatives for proceeding with the development of (system) to address deficiencies documented in the MNS."

1.2 POINTS OF CONTACT

This paragraph shall identify the Functional Manager and any other pertinent point of contact, and provide addresses and telephone numbers.

1.3 PROJECT REFERENCES

A summary of references which are applicable to the development of the Requirements Statement will be listed in Appendix A of the Requirements Statement.

1.4 TERMS AND ABBREVIATIONS

All terms and abbreviations used in the Requirements Statement or pertaining to the subject system will be listed in Appendix B of the Requirements Statement.

SECTION 2. SYSTEM SUMMARY

2.1 EXISTING METHODS AND PROCEDURES

This paragraph should provide a brief description of the current methods and procedures being employed to satisfy existing information requirements.

2.2 REQUIRED OBJECTIVES

Identify system objectives based on the deficiencies cited in the

REQUIREMENTS STATEMENT

IRM-5231-20A

MNS. These objectives should be user oriented and distinct enough to permit the development of user capabilities. Quantifiable objectives provide the most meaningful information toward development of quantifiable user requirements.

SECTION 3. REQUIRED CAPABILITIES

3.1 USER REQUIREMENTS

Describe user requirements in functional terms. When a requirement is the improvement of existing methods and procedures, state the extent of anticipated improvement and the relationship to previously stated deficiencies. Each requirement should be given a numerical designation which can be referred to throughout the life of the system. Requirements should also be ranked to determine the priority of the need against the overall system objectives. Appendixes D and E provide examples of functional requirements and prioritizing requirements.

3.2 PERFORMANCE REQUIREMENTS

Identify the standards by which the performance of the project is to be measured and the minimum standard of acceptable performance. These standards should be quantifiable and demonstrably measurable.

3.3 TELECOMMUNICATIONS REQUIREMENTS

Describe all potential telecommunications support requirements to include projected volumes and types of data to be exchanged and the frequency of data exchange.

3.4 SENSITIVITY OF DATA REQUIREMENTS

Describe the requirements for protecting unclassified sensitive or classified data. Ensure classified processing follows applicable policy and guidance. Unclassified sensitive information must be protected in accordance with the Computer Security Act of 1987 (Public Law 100-25).

SECTION 4. DESIGN DETAILS

4.1 INTERFACE REQUIREMENTS

Describe the proposed system's relationship with existing or proposed systems. Include the purpose of the requirement for the interface and manner in which the interface is to be achieved. See MCO 3093.1 regarding interoperability with tactical C4I systems.

4.2 OPERATING ENVIRONMENT

Identify the required system operating environment. Address the requirements for the system to operate in a deployed/employed environment.

REQUIREMENTS STATEMENT
IRM-5231-20A

4.3 SYSTEM UPGRADES

For the project which is an upgrade/improvement of a system, describe the following: functional improvements (new capabilities); improvements of degree (upgrading existing capabilities); increased timeliness (decreased response or processing time); and the elimination or reduction of existing capabilities that are no longer needed.

4.4 CONTINGENCY PLANNING

Identify all requirements for internal backup and alternate site processing. IRM-5510-04, Contingency Planning, provides policy and guidance on Marine Corps Contingency Planning.

4.5 SYSTEM FLEXIBILITY

Describe all significant requirements for flexibility in terms of potential changes such as volumes and frequencies of input, retained data/storage, and output processing requirements or the number of users. Potential growth should be quantified and the basis for growth factor presented.

Appendix D

FUNCTIONAL REQUIREMENTS EXAMPLE

SECTION 1. GENERAL

User requirements should be detailed in basic functional terms. A Requirements Statement does not attempt to resolve the deficiencies cited in the MNS, rather it provides details on the needs identified by the user(s). The following section provides examples of requirements stated in functional terms.

SECTION 2. REQUIREMENTS EXAMPLES

The examples provided in this section are functional requirements for a fictitious Marine Corps supply activity, note that each function and corresponding requirement has a specific numerical sequence. As shown in the examples below, each functional requirement addresses what is required, not how the deficiencies will be corrected. When developing a Requirements Statement these requirements would appear in Section 3, paragraph 3.1, User Requirements (detailed on page C-2 of this publication).

1. FUNCTION: Allocate Procurements

1.1. Record Prepositioned War Reserve (PWR) and training requirements by DODIC and storage activity.

1.2. Track current on-hand balance of assets for each storage activity by issuable Condition Code, Purpose Code, and Name of Organization.

1.3. Compare the due-in and on-hand quantity of each storage activity with its PWR requirement.

1.4. Report PWR deficiencies.

1.5. Automatically generate space available confirmation requests by storage activities.

1.6. Record changes to procurement data, recalculate allocations to storage activities and automatically generate new due-in transactions.

2. FUNCTION: Track Receipts

2.1. Track procurements due-in to Marine Corps by MIPR Number.

2.2. Track procurements due-in to consignees by Document Number within MIPR Number; notify consignees.

REQUIREMENTS STATEMENT

IRM-5231-20A

2.3. Report outstanding procurements due-in by Document Number within MIPR Number.

2.4. Automatically generate follow-up notices regarding procurement shipments and receipts.

3. FUNCTION: Prepare Requisition and Redistribution Transactions

3.1. Provide capability to enter requisitions received via mail, message, or telephone.

3.2. Provide immediate access to source requisitions, Document Control File status, and current asset status.

3.3. Provide capability to post requisitions on-line, immediately updating assets.

3.4. Provide history of all transactions that are processed against a Document Number, regardless of age of the transaction.

4. FUNCTION: Quality Assure All Transactions

4.1. Provide an on-line correction process, formatted review of incoming transactions.

4.2. Provide an on-demand report generation facility for the incoming transactions sorted by Document Number and Document Identifier Code.

5. FUNCTION: Reconcile Inventory

5.1. Provide an inventory reconciliation process which:

5.1.1. Uses a daily balance transaction as a primary synchronization tool.

5.1.2. Contains a daily transaction comparison process.

SECTION 3. RANKING OF REQUIREMENTS

Once all functional requirements have been determined, each requirement should be ranked to determine the severity/priority of the need. Prioritizing requirements example is detailed in Appendix E.

Appendix E

PRIORITIZING REQUIREMENTS EXAMPLE

SECTION 1. GENERAL

1.1 RANKING OF REQUIREMENTS

Each problem/deficiency should be ranked to determine the severity of the problem/deficiency and the priority of the requirement. An example of a ranking system is provided below. Alternative methods of ranking requirements may be used.

Severity of the Problem/Deficiency

S: A severity ranking is assigned to the problem/deficiency by the AIS work group, functional manager, or other appointed body or individual. The following numeric codes apply:

- 1: Severe problem/deficiency
- 2: Significant problem/deficiency
- 3: Relatively minor problem/deficiency

Priority of the Requirement

P: Priority ranking assigned to each requirement by the AIS work group, functional manager, or other appointed body or individual. The following numeric codes apply:

- 1: High priority
- 2: Medium Priority
- 3: Low Priority
- N: No priority assigned to this requirement because it is not addressed by the system objectives.

1.2. CLASSIFICATION

To assist in the overall requirements analysis process, each requirement may be further classified into functionally defined subcategories. It may simplify the analysis/review process of a large project to divide the requirements into smaller functional subcategories. This will allow the analysts to review discrete

REQUIREMENTS STATEMENT
IRM-5231-20A

portions of the overall problem being addressed. These subcategories should be designated by the functional manager. The following functional subcategories are provided as an example.

Functional Subcategories

Organization: Requirement represents a change to current organizations and/or policies.

Central System: Requirement represents a significant change to one or more systems.

Interface: Requirement can be supported by a system interface.

System Integration: Requirement is supported through system integration.

Training: Requirement is supported by a training capability.

SECTION 2. PRIORITIZING REQUIREMENTS EXAMPLE

The example provided in this section is functional requirements for a fictitious Marine Corps unit. This method summarizes the results of an analysis performed to determine a set of functional requirements. It should be noted that each requirement addresses a problem/deficiency cited in the MNS. The "S" below is the severity ranking and the "P" is the priority ranking.

<u>MNS Problem/Deficiency</u>	<u>S</u>	<u>Requirement</u>	<u>P</u>	<u>Func SubCat</u>
Admin personnel lack the fundamental skills necessary to meet the requirements associated with maintaining effective admin support. Interviews with unit, disbursing, and ACU personnel indicate that the complexity of the system, lack of training, and high turnover rates all contribute to the problem.	1	(1.1.) Establish a comprehensive means of conducting entry level refresher and technical training for users and system maintenance personnel.	1	Organization
		(1.2.) Distribute and maintain current procedurally oriented User's Manuals that provide clear, complete and concise instructions in the use of the ADP system.	1	Training
		(1.3.) Distribute statistical reports	2	Organization

REQUIREMENTS STATEMENT
IRM-5231-20A

<u>MNS Problem/Deficiency</u>	<u>S</u>	<u>Requirement</u>	<u>P</u>	<u>Func SubCat</u>
		to reporting and higher echelons for use in identifying requirements for remedial management and training actions.		

Note: The Requirement Numbers (i.e., 1.1., 1.2., and 1.3.) are used to trace the requirement through the development process to its ultimate solution. In this way, all acquired or developed products can be justified as satisfying an approved and validated requirement.

